

FAUNISTIC NOTE

# Is *Hippocampus hippocampus* (Osteichthyes, Syngnathiformes, Syngnathidae) a member of the Romanian ichthyological fauna?

Alexandru Iftime<sup>1</sup>

<sup>1</sup> "Grigore Antipa" National Museum of Natural History, 1 Kiseleff, 011341 Bucharest, Romania

Corresponding author: Alexandru Iftime (aiftime@antipa.ro)

Received 12 April 2023 | Accepted 12 June 2023 | Published 30 June 2023

**Citation:** Iftime A (2023) Is *Hippocampus hippocampus* (Osteichthyes, Syngnathiformes, Syngnathidae) a member of the Romanian ichthyological fauna?. Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa" 66(1): 179–184. <https://doi.org/10.3897/travaux.66.e104882>

## Abstract

We present a record of *Hippocampus hippocampus* (the short-snouted seahorse) from a museum collection specimen, arguing that it most likely represents the first known occurrence of this species from the Romanian Black Sea waters.

## Keywords

*Hippocampus hippocampus*, Romanian waters, first record.

The seahorses are well-known, iconic fish species, whose endearing figure sporting a horselike head and erect posture have, however, brought upon them an unwanted attention, as many are captured and sold for the aquarium trade, as curios or for use in folk pharmacopoea, bringing many species to decline (Lourie et al. 2004; Koning and Hoeksema 2021). The Black Sea hosts two species, the long-snouted seahorse, which is the more common, and the short-snouted seahorse (Dawson 1986; Bașusta et al. 2014; Taylan et al. 2020; Pierri et al. 2022), both widespread species in European seas (Pierri et al. 2022). While the long-snouted seahorse is nowadays accepted as *Hippocampus guttulatus* Cuvier, 1829 and the short-snouted one as *Hippocampus hippocampus* (Linnaeus, 1758), there has been much confusion between the two, and an opinion was voiced that the long-snouted species is, in fact, referred to

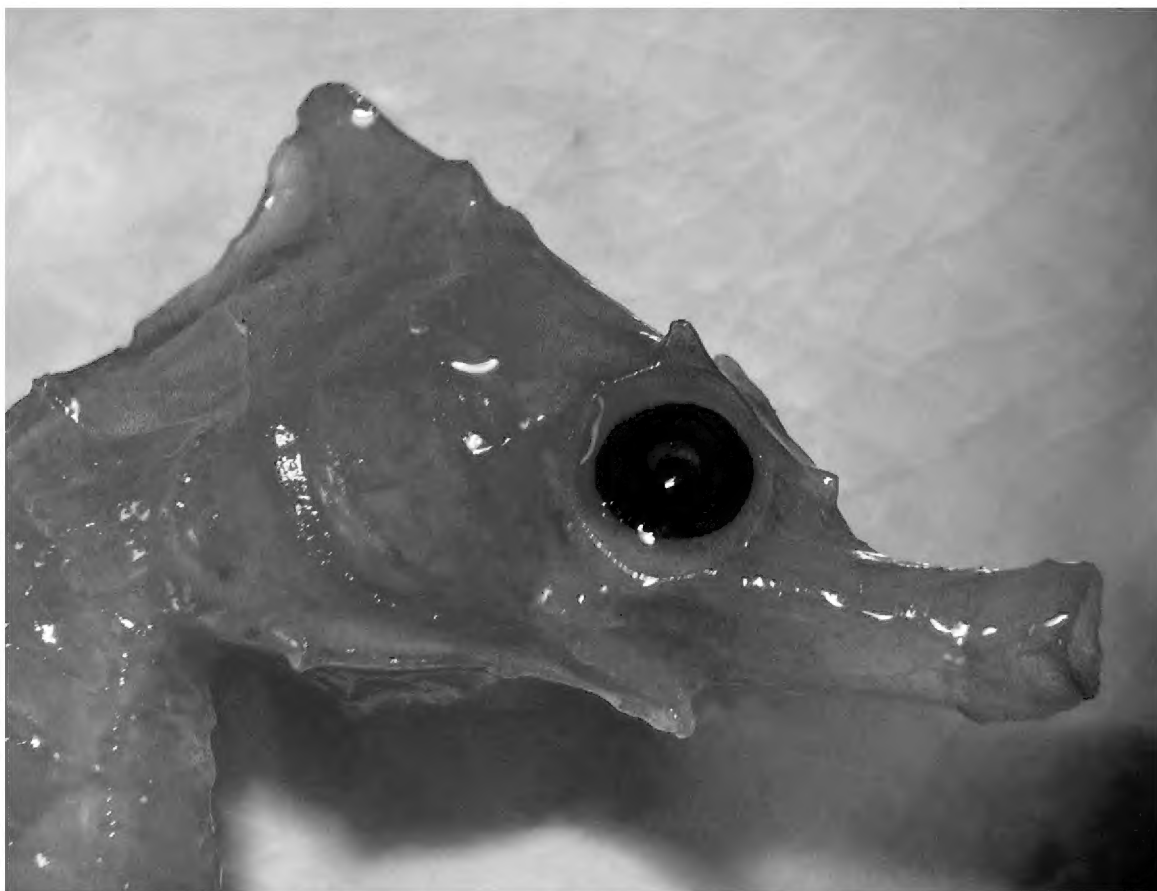
by the Linnaean description and should be known as *H. hippocampus*, while the short-snouted species ought to be referred to as *H. brevirostris* Schinz, 1822 (Vasil'eva 2007a,b – considering that only the long-snouted species occurs in the Black Sea, which was subsequently clarified to be otherwise). However, this taxonomical opinion has not been followed as it would have lead to even more confusion (MacLaine 2015), and the classic nomenclature is followed (Lourie et al. 2016; Froese and Pauly 2023; Fricke et al. 2023). Also, suggestions that the Black Sea long-snouted seahorse may prove to be a distinct species from *H. guttulatus* (Lourie et al. 2004) were not supported by subsequent research (Woodall et al. 2015; Lourie et al. 2016). As for the Romanian Black Sea sector, while the nomenclatural confusion was apparent even here (see the discussion in Bănărescu 1964), recent studies identify *H. guttulatus* as the only seahorse inhabiting Romanian waters (Bănărescu 1964; Oțel 2007; Taflan et al. 2017; Nenciu et al. 2019; Niță et al. 2022). However, *H. hippocampus* is known from Ukrainian Black Sea waters very close to the border of Romania (Pierri et al. 2022), validating an inquiry on the presence of the species in Romanian Black Sea waters.

The fish collection of the “Grigore Antipa” National Museum of Natural History was searched for *Hippocampus* specimens, in an attempt to identify *H. hippocampus*. Identification was carried after morphological features as given by Lourie et al. (2004), Kara and Quignard (2019) and Froese and Pauly (2023).

One specimen (a male) was found with typical characteristics of *H. hippocampus*: pointed, wedge-like coronet smoothly connected to the nape, short snout (5 mm snouth length, vs. 15.5 mm head length, to a 3.1 HL/SnL ratio), upwards-tilted snout, 11 body rings, 37 tail rings, 14 pectoral fin rays, 17 dorsal fin rays: Fig. 1, left, compared with a typical Black Sea *H. guttulatus*, right (in which notice domed coronet, not smoothly connected to nape, and longer snout); Fig. 2, head detail of the left specimen. This *H. hippocampus* specimen was found in a sample labelled “*Hyppocampus* [sic], Romania”, which also included small specimens of *Neogobius fluviatilis* and *Pegusa lascaris*, as well as some degraded specimens of lanternfishes (fam. Myctophidae), of obvious exotic provenience, and had an internal handwritten label “#16 MN”. Despite the obviously suboptimal labelling, upon inquiry with persons participating in previous collecting campaigns of the Museum, we could find that the sample was collected by the late ichthyologist Th. Nalbant in the marine (MN being initials of Marea Neagră, Romanian for the Black Sea) littoral area of the Romanian Danube Delta during a series of field trips in 1975–1890. The co-occurring *Neogobius* and *Pegusa* fit well with the character of an ichthyological sample from the littoral Black Sea waters in the Danube Delta area, such fishes being known from this partly freshened (brackish) marine habitat (Bănărescu 1964; Oțel 2007). The lanternfish sample was most probably added to this sample by mistake while in storage. We appreciate the possibility for co-occurrence of *H. hippocampus* and lanternfishes in a sample (that would have brought the seahorse in together with the lanternfishes) as extremely remote, as it is precluded by the wholly different ecology of such fishes, as the short-snouted seahorses are shallow-water littoral/shelf benthic dwellers, and the lanternfishes meso- to epipelagic diel migrants in deep waters (see, e.g., Pierri et



**Figure 1.** *Hippocampus hippocampus*, sample from the Romanian Black Sea littoral waters in the Danube Delta area (left), compared with typical Black Sea *H. guttulatus*. Photo Al. Iftime.



**Figure 2.** *Hippocampus hippocampus*, head detail of the same specimen as in Fig. 1. Notice pointed, wedge-shaped coronet, smoothly connected to nape, short, upwards-tilted snout. Photo Al. Iftime.

al. 2022 for *H. hippocampus*; Catul et al. 2010 for Myctophidae). An additional clue for the Black Sea origin of the *H. hippocampus* specimen in our sample is the strong similarity in spine pattern/development (e.g. the cheek spine shape) with the Black Sea specimen figured by Baştusta et al. (2014), as opposed to images of *H. hippocampus* from elsewhere (e.g. Vasil'eva 2007a; Garrick-Maidment 2007; Valladares et al. 2014; Spinelli et al. 2018) and the scientific drawings in Lourie et al. (2004); while the species is very variable in morphology (as the quoted works illustrate), the likelihood for such similarity to be coincidental is small, especially given the high variability.

While the possibility for mistake cannot be entirely be eliminated, we consider that the likeliest conclusion is the presence of *H. hippocampus* in the coastal waters of the Black Sea in the Danube Delta area, at least transiently, in the years 1975–1980. The presence of this species in brackish waters has already been documented (e.g. Spinelli et al. 2018) and should not come as a surprise. Also, this area is quite close to the finding from the nearby waters of Ukraine (Pierri et al. 2022). The sampling in order to confirm its occurrence should accordingly be done preferentially in the northern, deltaic areas of the Romanian coastal waters of the Black Sea.

## Acknowledgements

The author expresses his thanks to Dr. Nicolae Găldean, Dr. Iorgu Petrescu, Dr. Angela Petrescu and Mrs. Aurora Dinu for help in identifying the location and provenience of the discussed sample.

## References

- Baştusta A, Özer EI, Girgin H, Serdar O, Baştusta N (2014) Length-weight relationship and condition factor of *Hippocampus hippocampus* and *Hippocampus guttulatus* inhabiting eastern Black Sea. *Pakistan Journal of Zoology* 46(2): 447–450.
- Bănărescu P (1964) Fauna RPR, 13 (Pisces-Osteichthyes). Ed. Acad. R.P.R., Bucureşti [in Romanian].
- Catul V, Gauns M, Karuppasamy PK (2010) A Review on mesopelagic fishes belonging to family Myctophidae. *Reviews in Fish Biology and Fisheries* 21(3): 339–354.
- Dawson CE (1986) Syngnathidae. In: Whitehead PJP, Bauchot M-L, Hureau J-C, Nielsen J, Tortonese E (Eds) *Fishes of the North-eastern Atlantic and the Mediterranean/Poissons de l'Atlantique du Nord-Est et de la Méditerranée*, UNESCO Paris publ., vol. II, pp. 628–639.
- Fricke R, Eschmeyer WN, van der Laan R (Eds) (2023) Eschmeyer's Catalog Of Fishes: Genera, Species, References (<http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>). Electronic version accessed 04.05.2023.
- Froese R, Pauly D (Eds) (2023) FishBase. World Wide Web electronic publication. [www.fishbase.org](http://www.fishbase.org), version (02/2023).



- Garrick-Maidment N (2007) British seahorse survey report 2007. Seahorse Trust, Devon, England. [https://www.theseahorsetrust.org/pdf/British\\_Seahorse\\_Survey\\_Report\\_2007.pdf](https://www.theseahorsetrust.org/pdf/British_Seahorse_Survey_Report_2007.pdf).
- Kara MH, Quignard JP (2019) Fishes in lagoons and estuaries in the Mediterranean 2. Sedentary fish. Ed. ISTE-Wiley, 418p.
- Koning S, Hoeksema BW (2021) Diversity of seahorse species (*Hippocampus* spp.) in the international aquarium trade. Diversity 13: 187, <https://doi.org/10.3390/d13050187>
- Lourie SA, Foster SJ, Cooper EWT, Vincent ACJ (2004) A Guide to the identification of seahorses. Project Seahorse and TRAFFIC North America. Washington D.C.: University of British Columbia and World Wildlife Fund.
- Lourie SA, Pollom RA, Foster SJ (2016) A global revision of the Seahorses *Hippocampus* Rafinesque 1810 (Actinopterygii: Syngnathiformes): Taxonomy and biogeography with recommendations for further research. Zootaxa 4146(1): 001–066.
- Maclaine J (2015) *Hippocampus hippocampus*. The saga of the short-snouted seahorse. Pulse, 25: 1–2.
- Nenciu M-I, Harcota ME, Totoiu A, Bisinicu E, Filimon A, Nita VN, Nicolae CG (2019) Prey preference of the long-snouted seahorse (*Hippocampus guttulatus* Cuvier, 1829) at the Romanian Black Sea coast. Animal Science 61(1): 348–355.
- Niță V, Nenciu M, Galațchi M (2022) Speciile de pești de la litoralul românesc. Atlas actualizat/ Fish species of the Romanian coast. Updated atlas. Constanța, 2022. Volum realizat cu sprijinul Ministerului Cercetării și Inovării, în cadrul Programului Nucleu INTEL MAR, proiectul: „Impactul factorilor limitativi asupra resurselor marine vii din zona costieră și îmbunătățirea metodologiilor de evaluare a stocurilor și parametrilor populaționali” (PN19260302). ISBN 978-973-0-36642-6 [in Romanian].
- Oțel V (2007) Atlasul peștilor din Rezervația Biosferei Delta Dunării. Ed. Centrul de Informare Tehnologică Delta Dunării, Tulcea [in Romanian].
- Pierri C, Lazic T, Gristina M, Corriero G, Sinopoli M (2022) Large-Scale Distribution of the European Seahorses (*Hippocampus* Rafinesque, 1810): A Systematic Review. Biology 11: 325, <https://doi.org/10.3390/biology11020325>.
- Spinelli A, Capillo G, Faggio C, Vitale D, Spanò N (2018) Returning of *Hippocampus hippocampus* (Linnaeus, 1758) (Syngnathidae) in the Faro Lake – oriented Natural Reserve of Capo Peloro, Italy. Natural Product Research, <https://doi.org/10.1080/14786419.2018.1490909>.
- Taflan E, Nenciu MI, Holostenco D, Ciorpac M, Filimon A, Danilov CS (2017) Life history of the Black Sea long-snouted seahorse (*Hippocampus guttulatus* Cuvier, 1829): colonization pattern and genetic differentiation. Book of Abstracts of the International Symposium Protection of the Black Sea Ecosystem and Sustainable Management of Maritime Activities - PROMARE 2017, 8<sup>th</sup> Edition, Constanța, Romania, 17–19 September 2017, CD Press Publishing House, Bucharest, 84.
- Taylan B, Gürkan Ş, Taşkavak E (2020) Reproductive biology of the Short-snouted Seahorse, *Hippocampus hippocampus* (Linnaeus, 1758) in the Eastern Black Sea of Turkey (Osteichthyes: Syngnathidae). Zoology in the Middle East 66(3): 1–10.

- Valladares S, Bañón R, López A, Bouza C, Chamorro A, García ME, Planas M (2014) First records of the seahorse *Hippocampus hippocampus* in Galician waters (NW Spain). *Cybium* 38(1): 74–76.
- Vasil'eva ED (2007a) Seahorse species (genus *Hippocampus*, Pisces) described by C. Linné. *Folia Zoologica* 56(3): 319–327.
- Vasil'eva ED (2007b) Ryby Chernogo Morya. VNIRO, Moskva, 238 pp [in Russian].
- Woodall LC, Koldewey HJ, Boehm JT, Shaw PW (2015) Past and present drivers of population structure in a small coastal fish, the European long snouted seahorse *Hippocampus guttulatus*. *Conservation Genetics* 16: 1139–1153.